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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/727,748	11/30/2000	Prathap Haridoss	10964-043001/ Case 629	4182
26161 7590 12/28/2006 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER CANTELMO, GREGG	
			ART UNIT 1745	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/727,748

Applicant(s)

HARIDOSS ET AL.

Examiner

Gregg Cantelmo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,21,22 and 25-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,21,22 and 25-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the amendment received October 13, 2006 and entered as per the RCE filed May 22, 2006:

- a. Claims 1-5, 21-22 and 25-32 are pending.
- b. The prior art rejections of record stand in the absence of a clear definition of the term single layer and in light of the fact that the composition of Breault appears to teach of a "single layer" as reasoned below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-5, 21-22 and 25-32 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. A clear disclosure of what the mechanical bonding entails critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The process fails to be reasonably and clearly define a single layer. Rather it would appear that the electrode is made up of multiple layers. For example a support having catalyst thereon would be indicative of multiple layers of materials in the electrode as opposed to a claimed single layer.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5, 21-22 and 25-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "single layer" in the claims is a relative term which renders the claim indefinite. The term "single layer" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The specification makes brief mention of this phrase but does not describe the what this structure specifically encompasses. Thus it is unclear as to what the term is limited to in the claimed invention and held to be vague and indefinite.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 21-22 and 25-32 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent No. 4,017,663 (Breault), of record.

Breault discloses a fuel cell electrode comprising a catalyst, a first material of tungsten oxide (same first material as identified in the instant claims and thus inherently resistant to oxidation up to about 3 volts vs. SHE) and a non-electrolytic material different than the catalyst (col. 2, line 66 through col. 3, line 5 and prior art claim 6). The catalyst is distributed on the graphite *and tungsten oxide* (see prior art claim 1). The

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catalyst load is 0.25 mg/cm^3 (col. 3, ll. 40-45). The weight of the mixed catalyst and tungsten oxide is 80% with the balance being the Teflon polymer (col. 3, ll. 1-5 as applied to claims 1 and 21). The non-electrolytic material in this example is 20 weight percent Teflon i.e., polytetrafluoroethylene (col. 3, ll. 3 as applied to claims 7, 8 and 10). Alternatively the non-electrolytic material can be FEP-120 which is a copolymer of tetrafluoroethylene and hexafluoropropylene (col. 2, ll. 55-60 as applied to claims 1 and 21).

The electrode layer as defined in prior art claim 6 is in fact a single layer wherein the first material (tungsten oxide), noble metal catalyst material and fluoropolymer are all present (as applied to claims 1 and 21).

Also, the claim does not specify what is or is not the "non-electrolytic material". Thus in the alternative, the Teflon in the catalyst-polymer mixture described in col. 3, ll. 1-10 is non-electrolytic and acts as a support carrier for the catalyst material.

A first resistant material of tungsten oxide is also present in the electrode mixture. The noble metal catalyst is mixed with the tungsten oxide. Since the material is the same as those set forth in the species of the instant claims, the tungsten oxide in the prior art composition is expected to have the same properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima

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facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). See col. 3, ll. 3 and col. 3, ll. 26-31 of Breault as applied to claims 1 and 21).

The catalysts are Pt and Ru which are capable of catalyzing oxidation of a fuel cell gas and capable of undergoing reversible oxide formation (col. 3, ll. 1-2 as applied to claims 2, 4, 5 and 22).

The fuel cell gas inherently comprises hydrogen (as applied to claim 3).

The catalyst total weight is 64% (col. 3, ll. 1-5 as applied to claims 25 and 29).

The first material is tungsten oxide (as applied to claims 26-28 and 30-32).

Response to Arguments

5. Applicant's arguments filed October 13, 2006 have been fully considered but they are not persuasive.

Applicant argues that there the composition of Breault is not a "single layer".

This argument is not persuasive for the following reasons:

First, the term "single layer" is not reasonably described in the instant application so as to ascertain what exactly this term encompasses. In addition, there is/are no process(es) described to understand specifically how the instant application applies this term nor is there any sufficient description of what structural products result from this claimed and vaguely disclosed term. Thus the phrase itself fails to meet the statues of 35 USC 112 1st and/or 2nd paragraph.

Secondly, the catalytic material and non-electrolytic material of Breault are both provided as a layer (prior art claim 6) in the electrode and thus the first material

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(tungsten oxide), catalyst and fluoropolymer of the anode are in fact provided in a single layer, as best would be compared to the claimed single layer.

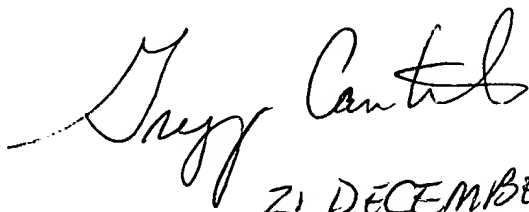
Therefore the composition of Breault as it applies to the claimed invention is exemplary of a "single layer."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Gregg Cantelmo
Primary Examiner
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December 21, 2006